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New or Noteworthy North American Phanerogams.—VI.

By N. L. Britton.

Ranunculus arvensis, L., which has been noticed on ballast about the eastern seaports for many years appears to be spreading. It was found by Mr. Wm. H. Rudkin at Tom's River, N. J., in 1884, and now Mr. Geo. V. Nash sends it from the vicinity of Clifton, Passaic Co., N. J.

Cardamine Pennsylvanica, Muhl. in Willd. Sp. Pl. iii. 486 (1800).

It has been a frequent topic of remark among American botanists that our *Cardamine hirsuta* is a glabrous plant. I have been interested for several years in accumulating a large number of specimens of the forms which have been referred to *C. hirsuta* and am convinced that the typical plant is rare in America, as is indicated in the sixth edition of Gray's Manual. Our common marsh and ditch plant differs from *C. hirsuta* in being glabrous or rarely with a few hairs on the petioles or leaf-margins, while all the European specimens of this species that I have seen are more or less pubescent on the stems, the upper surface of the leaf-segments or the petioles. *C. Pennsylvanica* is much larger and more leafy, being often two feet high; the leaves of *hirsuta* being mainly radical; the leaf-segments of *Pennsylvanica* are larger, more generally oblong or ovate, narrowed rather than rounded at the base, as is the case with those of *hirsuta*, and have a decided tendency to be decurrent on the rachis, while those of the European plant are nearly uniformly distinct and stalked; the leaf-segments of *Pennsylvanica* are also thinner and more lobed than those of *hirsuta*; the fruiting pedicels of *Pennsylvanica* are always somewhat spreading and sometimes conspicuously so, while those of *hirsuta* are nearly or quite erect and the pods appressed.

I have but a single specimen of true *C. hirsuta* from North America, collected by John K. Small, May 2, 1891, along the Susquehanna River, north of Wrightsville, York County, Penn. The question of its distribution will be an interesting one. Is it Northern or Alleghenian? Or perhaps introduced from Europe?

Cardamine parviflora, L. Sp. Pl. Ed. 2, 914 (1763).

In the "Transactions of the New York Academy of Sciences" ix. 8 (1889), I have maintained that the plant described by Dr. Gray (Man. Ed. 5, 67), as *Cardamine hirsuta*, var. *sylvatica*, is specifically distinct from *C. hirsuta*, and referred it to *C. flexuosa*, With., a European plant. I am satisfied now, as I was then, that it is distinct from *C. hirsuta*, but after a study of a long series of European specimens at Kew and the British Museum, I am equally satisfied that it is not *C. flexuosa*, but is *C. parviflora*, of which I have seen the original specimen in the Linnæan Herbarium. The equivalency of our plant with the European is noted by Watson and Coulter (Gray, Man. Ed. 6, 65). This species is evidently of northern range, occurring from Virginia and Pennsylvania to Quebec (according to Macoun) and Western Ontario.

As I now understand these plants there is still a third eastern species, the *Cardamine Virginica* of Michaux. (Fl. Bor. Am. ii. 29, 1803), and *C. hirsuta* var. *Virginica*, T. and G. Fl. N. A. i. 85, but not *C. Virginica*, L. This grows in sandy, open, moist soil along the Atlantic coast. It is very much branched at the base, forming numerous, ascending or erect leafy stems six inches to a foot high, the leaves nearly erect and divided into numerous linear or linear-oblong, obtuse or obtusish segments, those of the lower leaves broader than those of the upper, as in all this group. The fruiting pedicels are ascending and the pods strictly erect. The plant is apparently glabrous throughout. I have it from Middletown, Conn., "on sandy fields subject to be overflowed by the rivers" (J. Barratt), Huckleberry Island, Long Island Sound, (Mrs. Britton), and collected it myself on April 16th of this year at Portsmouth, Va., where it was in full fruit and flower, and impressed me by its very different appearance from any form with which I was familiar. As Michaux's name for the plant is preoccupied by the Linnæan, I propose for it CARDAMINE ARENICOLA.

Arabis Virginica (L.)

Cardamine Virginica, L. Sp. Pl. 656 (1753) not of Herbarium.

Cardamine Ludoviciana, Hook. Journ. Bot. i. 191 (1834).

Arabis Ludoviciana, Meyer Index Sem. Petr. ix. 60 (1843).

Arabis Virginica, Branner and Coville, Rep. Geol. Surv. Ark. for 1888, 165 (1891).

Messrs Branner and Coville, at the place above cited, express themselves as uncertain of the applicability of the Linnæan name to this species. They have taken it up correctly, however, although it has had a curious history. The specimen preserved under the name *Cardamine Virginica* in the Linnæan Herbarium is *Sisymbrium asperum*, L. of Southern Europe, which bears a wonderful resemblance to the plant of the Southern United States, readily distinguishable, however, by its glandular-roughened siliques, those of the our plant being perfectly glabrous. The foliage of the two species is practically identical. It is perfectly evident, however, from his description that Linnæus had only the American plant in mind, and this is proved by the types preserved at the British Museum of Natural History. I found no specimen of his *Sisymbrium asperum* except the one labelled *Cardamine Virginica*, in the Linnæan Herbarium, and it is clear that this one has been accidently fastened down to the wrong sheet.

AGRIMONIA MOLLIS (T. and G.).

Agrimonia Eupatoria, var. *mollis*, T. and G. Fl. N. A. i. 431 (1840).

Agrimonia pubescens, Wallr. Beitr. Bot. i. 45, t. 1. f. 7. (1842) ex descr.

This is another plant of this genus which I am sure deserves specific rank. I pointed out the characters of Wallroth's *A. microcarpa* in the BULLETIN, xviii. 367. The present plant, recognized as a variety by Torrey and Gray, has a slender canescent or pubescent stem, five to nine principal leaflets which are oblong or obovate, obtuse and equally dentate, small flowers and turbinate fruit, borne on erect, short pedicels and a glabrous, ribbed calyx 2 mm. high in fruit.

We have it from Red River (Dr. Pitcher, the type specimen of the variety), Riverdale, N. Y. (Bicknell), Little Neck, Long Island (Schrenk), Heiligs Mill, N. C. (Small and Heller, No. 321). The North Carolina specimen has tuberous thickened roots, as especially remarked by the collectors, and these are also shown by Mr. Bicknell's plants from Riverdale.

FRAGARIA AMERICANA (Porter).

F. vesca, var. *β*, Torr. and Gray, Fl. N. A. i. 148 (1838).
F. vesca, var. *Americana*, Porter, Bull. Torr. Club, xvii. 15 (1890).

The characters of this plant have been well indicated by Prof. Porter. It differs from the European *F. vesca* in its thin, deeply and sharply dentate leaflets, which become glabrate in age, and superficial achenes which are scarcely or not at all imbedded in the ovoid fruit. I have seen no form of the European plant which very closely resembles it. It is an Appalachian and northern species, extending west to Michigan and south to Virginia, probably further both to the south and west. The introduced *F. vesca*, which occurs rather sparingly in the Eastern States, may usually be distinguished from *F. Virginiana* by a character not alluded to in recent text-books, but mentioned by Dr. Sturtevant in Mem. Torr. Club i. 183, 184; this is that in *F. vesca* the fruit is borne above the leaves, while in *F. Virginiana* the leaves rise above the fruit.

Fragaria Virginiana, Mill. Gard. Dict. Ed. 8, No. 2 (1768).

Miller is the author of the species rather than Duchesne, to whom it is usually ascribed, the date of Duchesne's publication in the sccond volume of Lamarck's Encyclopedia being 1786; Miller's type is preserved in the Herbarium of the British Museum of Natural History.

Fragaria Canadensis, Michx. Fl. Bor. Am. i. 299 (1803).

This plant, referred by recent authors to *F. Virginiana*, appears to me to be a distinct species. It is a slender plant, the hairs on the flowering scape appressed as in *F. Virginiana*, but the leaflets are much narrower, oblong or the middle one obovate and cuneate at the base, all obtuse, rather sparingly and not deeply toothed, averaging not more than 3 cm. long and 1.5 cm. wide, quite glabrous on the upper surface even when young, pale and more or less appressed, pubescent beneath; the flowers are few, about 1.5 cm., broad and slender pedicelled. I have not seen the fruit.

Michaux's plant, preserved in the Paris Herbarium, came from Lake Mistissini. We have specimens collected by Dr. Richardson in Arctic America, and by Kennicott on Elk River. The species is thus indicated as high northern in distribution.

Valeriana pauciflora, Michx. Fl. Bor. Am. i. 1803.

The pappus of this species is not described so far as I am able to ascertain. One of the essential characters of *Valeriana*, as the genus is recognized by recent authors, is the development of the calyx-teeth into plumose bristles. In *V. pauciflora*, however, I find no indication that this is the case, even in fruit which seems to be perfectly mature, which I have from Professor Porter, collected by him at Millersburg, Penn., in 1865. In this the calyx-teeth remain short and inrolled, are slightly ciliate, and about 0.5 mm. long. In the related *V. Arizonica*, A. Gray, the fruit of which was not known to the describer at all events at the time of description, but which I have from a specimen collected by Dr. Rusby on Bill Williams Mountain, Arizona, in 1883, the similar short inrolled calyx-teeth occur. Now both these species differ from all other Valerians that I have at hand to examine by their large, slender, elongated corollas, resembling in this character the European genus *Centranthus*. They do not agree with *Centranthus*, however, in other important particulars, this genus having an elongated pappus and only one stamen.

I am printing this note to call attention to the fruit of *V. pauciflora*, in the hope that some one may be able to examine it when perfectly mature, and to determine whether it ever developes the copious pappus of other species.

Stevia ovata, Raf. New Fl. N. A. iv. 73 (1836).

A specimen of this plant, which Rafinesque says was collected by Walton in "Texas and Arkanzas," is preserved in the Columbia College Herbarium, with Rafinesque's own label. It is quite the same as other specimens labelled *Stevia ovata* received from Meisner and grown in the Basel garden, and from the Liverpool Botanic Garden sent to Dr. Torrey by Mr. Stead, collected in 1820. Whether or not these specimens are all the same as *S. ovata*, Lag. Nov. Gen. et Sp. 27, which Mr. Hemsley records only from South Mexico, I have no means of ascertaining other than the description. The locality cited by Rafinesque may be wrong, but it is worth while to record that his specimen is preserved.

ASTER CORDIFOLUS, L. var. INCISUS, n. var.

Leaves all lanceolate, glabrous, sharply serrate, or the lower incised, none of them cordate at base. Pocono Mountain, Penn. (Moser, 1832); near Riverdale, N. Y. (Bicknell, 1891).

Dr. Gray alludes to Moser's Pocono specimen in the Synoptical Flora as an extreme form of *A. cordifolius*. This plant appears to me worthy of varietal rank. It is nearest var. *lanceolatus*, Porter, BULLETIN, xvi. 68.

POLEMONIUM VAN-BRUNTIÆ, n. sp. (Plate CXXXI).

Rootstock stout, horizontal. Stems erect, glabrous below, somewhat glandular-pubescent above, 6-8 dm. high, leafy to the top; leaflets of the lower leaves 15-19, short-petioluled, or sessile, ovate or lanceolate, 1½-3½ cm. long, 5-15 mm. wide, those of the upper ones fewer; cymose clusters panicled or solitary, rather loosely 3-8 flowered; flowers bluish-purple, 15-20 mm. broad; petals rounded; calyx 5-lobed to about the middle, much enlarged in fruit, the lobes acute or acutish; stamens exserted; ovules 3-4 in each cell of the ovary.

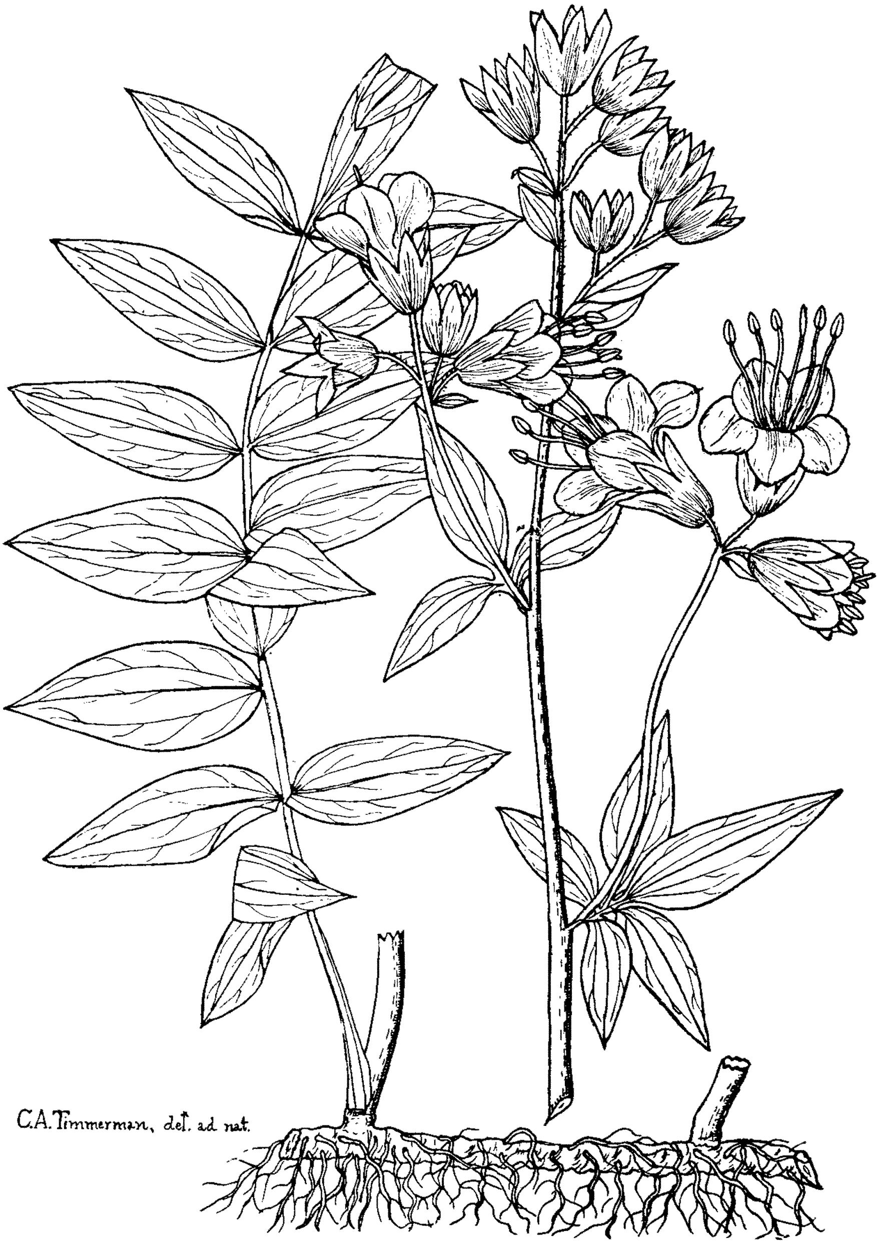
In cold, wet places, New York—Herkimer Co. (Clinton); Delaware Co. (Gilbert); Schoharie Co. (Howe); Ulster Co., Balsam Lake (Mrs. Van Brunt); Alder Lake (Rusby); Chenango Co., Preston and McDonough (Coville, BULLETIN, xii. 53); Tioga Co., near Appalachin (C. D. Fretz, BULLETIN, ix. 72).

Vermont—near Ripton (Brainerd, BULLETIN, viii. 6).

New Jersey—Warren Co., swamp near Washington (Garber, Porter).

Maryland—near Oakdale (J. Donnell Smith).

This fine species has always been referred to the European *P. cœruleum*, L., from which it differs in its horizontal stout rootstocks, more leafy stem, exserted stamens, rounded (not mucronulate) petals, accrescent calyx which becomes twice or three times the size of that of *P. cœruleum*, broader and fewer leaflets, and fewer ovules. I take pleasure in dedicating it to the lady who has supplied such fine and numerous specimens by means of which the



C. A. Timmerman, del. ad nat.

Polemonium Van-Bruntiæ, Britton.

marked differences between it and the European plant may be pointed out.

The Rocky Mountain plant referred to *P. cœruleum*, but well separated by Professor Greene (Pittonia, ii. 75), as *P. occidentale*, has slender rootstocks, the upper part of the stem viscid pubescent, narrower, lanceolate leaflets and stamens only the length of the corolla, the fruiting calyx not nearly as large, and its lobes obtuse or obtusish. As pointed out by him, the subterranean parts of the true *P. cœruleum* are widely different from either of the American species. He supposes that the Appalachian plant is the same as the Colorado species, but Mrs. Van Brunt's specimens, taken with the others that I have seen, render that view untenable.

The foliage of *P. Van-Bruntiæ* bears considerable resemblance to that of *P. reptans*, L., but that plant is well marked by its diffuse habit, flowers half the size, stamens included, and calyx lobed only about one-third of its length, the lobes obtuse.

PHLOX KELSEYI, n. sp.

Many-stemmed from a woody root, the stems spreading, creeping or ascending, sometimes 20 cm. long, glabrous or slightly pubescent above, very leafy. Leaves sessile, oblong or linear-oblong, glabrous or nearly so on both sides, 5-15 mm. long, 2-4 mm. wide, thick, rigid, the apex mucronately tipped with a short spine, the margins revolute, ciliate; upper leaves narrower and longer than the lower; flowers sessile or short-peduncled, the peduncles and calyx somewhat glandular-pubescent or glabrous; calyx-teeth subulate, as long as or longer than the tube; corolla-tube somewhat exceeding the calyx-lobes; corolla-limb, about 1.5 cm. broad, bright blue or lilac, its lobes obovate-cuneate, rounded.

Helena, Mont. (F. D. Kelsey); Madison Co., Mont. (F. Tweedy, No. 154); Ft. Buford, N. Dakota (V. Havard); Black Hills (Jenney).

This plant, which I confidently propose as an undescribed species, is apparently nearest to *P. longifolia*, Nutt., var. *Stansburyi* (Torr.), forma *brevifolia*, A. Gray, Proc. Amer. Acad. viii. 225, changed to sub-var. *brevifolia*, A. Gray, in the botany of the 40th parallel and to var. *brevifolia*, A. Gray in the Synoptical Flora of North America. From the remarks at the place of original publication Dr. Gray evidently intended *breviflora* to apply to the shorter-leaved forms of the viscidly glandular southwestern *P. longifolia*, var. *Stansburyi*, such as illustrated by No. 896 of the 40th parallel collection, and hence *brevifolia* is not to be regarded as a synonym of the species here proposed, although Dr. Gray subsequently so-named Mr. Jenney's Black Hills specimens here referred to *P. Kelseyi*.

The status of *Stansburyi* as a variety of *P. longifolia* does not appear to me to be satisfactory. *P. longifolia* is a very narrow-leaved plant, almost glabrous throughout, and is of northwestern range. *Stansburyi* is viscidly glandular, with broader leaves and of southwestern distribution. Types of both are in our herbarium.

I am indebted to Dr. B. L. Robinson for a comparison of my specimens with those in the Gray herbarium.

CYPERUS DIANDRUS, Torr., var. ELONGATUS n. var.

Spikelets linear, acute, slender, 2-2.5 cm. long; scales, or some of them, brown-margined as in var. *castaneus*.

This plant was collected in 1865 at Summit, N. J., by Mr. Wm. H. Leggett, and again last year by Mr. E. P. Bicknell at Van Cortlandt, N. Y. Its much elongated spikelets give it a very different appearance from the var. *castaneus*, with which it grew at both localities.

Eriocaulon bilobatum, n. sp.

By Thomas Morong.

Stems numerous, 2-2½ inches high, very slender, about 5-striate. Leaves acuminate, pellucid, 3-5-nerved, spreading, ½-¾ inch long. Sheaths usually bilobed at the apex, loose, somewhat longer than the leaves. Heads ovoid, 1-1½ lines high, very glabrous and dark-colored. Involucral scales ovate, obtuse, entire, fuliginous. Bracts as long as the flowers, elliptical, glabrous. Segments of the perianth 6: of the fertile flower, thread-like, glabrous or slightly woolly, greenish or fuscous in color, loosely cellular in structure, about ½ line high, the tube white; sterile flowers in the apex of the head about the size of the fertile, but the perianth segments broader, lanceolate in shape, glabrous and fuscous, often reduced to 2 in both the outer and inner perianth. Stamens 6, anthers mostly white. Receptacle smooth. Seeds oval, about $\frac{1}{75}$ of an inch in length, the surface covered with crested ridges or imperfect recticulations.